

We claim:

1. A symmetric radiographic silver halide film having a film speed of at least 700, and comprising a support that has first and second major surfaces and that is capable of transmitting X-radiation,

said radiographic silver halide film having disposed on said first major support surface, two or more hydrophilic colloid layers including first and second silver halide emulsion layers, and having on said second major support surface, two or more hydrophilic colloid layers including third and fourth silver halide emulsion layers, said first and third silver halide emulsion layers being the outermost emulsion layers on their respective sides of said support,

each of said first, second, third, and fourth silver halide emulsion layers comprising tabular silver halide grains that have the same or different composition and an aspect ratio of at least 15 and an average grain diameter of at least 3.0 μm , and comprise at least 90 mol % bromide and up to 3 mol % iodide, both based on total silver in said grains,

said second and fourth silver halide emulsion layers comprising a crossover control agent sufficient to reduce crossover to less than 10%,

wherein said tabular silver halide grains in said second and fourth silver halide emulsion layers are dispersed in a hydrophilic polymeric vehicle mixture comprising at least 0.25% of oxidized gelatin, based on the total dry weight of said hydrophilic polymeric vehicle mixture.

2. The film of claim 1 wherein said tabular silver halide grains in said first, second, third, and fourth silver halide emulsion layers are composed of at least 95 mol % bromide and up to 0.5 mol % iodide, both based on total silver in the emulsion layer.

3. The film of claim 1 wherein all of said tabular grains in said first, second, third, and fourth silver halide emulsion layers are green-sensitized tabular silver halide grains.

4. The film of claim 1 wherein said tabular silver halide grains in said second and fourth silver halide emulsion layers have an aspect ratio of from about 35 to about 45, an average grain diameter of at least 4.0 μm , and an average thickness of from about 0.08 to about 0.12 μm , and

said tabular silver halide grains in said first and third silver halide emulsion layers have an aspect ratio of from about 15 to about 25, an average grain diameter of at least 4.0 μm , and an average thickness of from about 0.11 to about 0.14 μm .

5. The film of claim 1 wherein said second and fourth silver halide emulsion layers comprise up to 1.5% deionized oxidized gelatin, based on total hydrophilic polymer vehicle mixture dry weight.

6. The film of claim 5 wherein said second and fourth silver halide emulsion layers comprise from about 0.4 to about 0.6% deionized oxidized gelatin, based on total hydrophilic polymer vehicle mixture dry weight.

7. The film of claim 1 wherein the dry, unprocessed thickness ratio of said first silver halide emulsion layer to that of said second silver halide emulsion layer is greater than 1:1, and the dry, unprocessed thickness ratio of said third silver halide emulsion layer to that of said fourth silver halide emulsion layer is independently greater than 1:1.

8. The film of claim 7 wherein the dry, unprocessed thickness ratio of said first silver halide emulsion layer to that of said second silver halide emulsion layer is from about 3:1 to about 1:1, and the dry, unprocessed thickness ratio of said third silver halide emulsion layer to that of said fourth silver halide emulsion layer is independently from about 3:1 to about 1:1

9. The film of claim 1 wherein the molar ratio of silver in said first silver halide emulsion layer to that of said second silver halide emulsion layer is greater than 1:1, and the molar ratio of silver in said third silver halide emulsion layer to that of said fourth silver halide emulsion layer is independently greater than 1:1.

10. The film of claim 1 further comprising an overcoat disposed over said hydrophilic colloid layers on each side of said support.

11. The film of claim 1 wherein the amount polymer vehicle on each side of said support is from about 30 to about 40 mg/dm² and the level of silver on each side of said support is from about 18 to about 24 mg/dm².

12. The film of claim 1 wherein said crossover control agent is present in an amount sufficient to reduce crossover to less than 8%.

13. The film of claim 1 wherein said crossover control agent is a particulate merocyanine or oxonol dye.

14. The film of claim 13 wherein said crossover control agent is a particulate magenta oxonol dye.

15. The film of claim 1 wherein said crossover control agent is present each of said second and fourth silver halide emulsion layers in an amount of from about 0.75 to about 1.5 mg/dm².

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16. A symmetric radiographic silver halide film having a film speed of at least 800 and comprising a support that has first and second major surfaces and that is capable of transmitting X-radiation,

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said radiographic silver halide film having disposed on said first major support surface, two or more hydrophilic colloid layers including first and

second silver halide emulsion layers, and having on said second major support surface, two or more hydrophilic colloid layers including third and fourth silver halide emulsion layers, said first and third silver halide emulsion layers being the outermost emulsion layers on their respective sides of said support,

each of said first and third silver halide emulsion layers comprising tabular silver halide grains that have the same composition, an aspect ratio of from about 15 to about 25, an average grain diameter of at least 4.0 μm , and an average thickness of from about 0.12 to about 0.13 μm , and comprise at least 98 mol % bromide and up to 0.5 mol % iodide, both based on total silver in said grains,

each of said second and fourth silver halide emulsion layers comprising tabular silver halide grains that have the same composition, an aspect ratio of from about 38 to about 45, an average grain diameter of at least 4.0 μm , and an average thickness of from about 0.09 to about 0.11 μm , and comprise at least 98 mol % bromide and up to 0.5 mol % iodide, both based on total silver in said grains,

each of said second and fourth silver halide emulsion layers comprising a particulate oxonol dye as a crossover control agent present in an amount of from about 1 to about 1.3 mg/dm^2 that is sufficient to reduce crossover to less than 8% and that is decolorized during development within 45 seconds,

said film further comprising a protective overcoat on both sides of said support disposed over all of said hydrophilic colloid layers,

wherein said tabular silver halide grains in said second and fourth silver halide emulsion layers are dispersed in a hydrophilic polymeric vehicle mixture comprising from about 0.35 to about 1.5% of deionized oxidized gelatin, based on the total dry weight of said hydrophilic polymeric vehicle mixture,

wherein the dry, unprocessed thickness ratio of said first silver halide emulsion layer to that of said second silver halide emulsion layer is from about 3:1 to about 1:1, and the dry, unprocessed thickness ratio of said third silver halide emulsion layer to that of said fourth silver halide emulsion layer is independently from about 3:1 to about 1:1, and

wherein the molar ratio of silver in said first silver halide emulsion layer to that of said second silver halide emulsion layer is from about 1.5:1 to about 3:1, and the molar ratio of silver in said third silver halide emulsion layer to that of said fourth silver halide emulsion layer is independently from about 1.5:1 to about 3:1.

17. A radiographic imaging assembly comprising the radiographic silver halide film of claim 1 that is arranged in association with one or more fluorescent intensifying screens.

18. A radiographic imaging assembly comprising the radiographic silver halide film of claim 16 that is arranged in association with two fluorescent intensifying screens, one on either side thereof.

19. A method of providing a black-and-white image comprising exposing the radiographic silver halide film of claim 1 and processing it, sequentially, with a black-and-white developing composition and a fixing composition, the processing being carried out within 90 seconds, dry-to-dry.

20. The method of claim 19 wherein the image so provided is used for a medical diagnosis.